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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* TSUYONOBU HATAZAWA, TOMITARO HARA,  
TAKAHIRO ENDO, and KAZUHIRO HATTA

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Appeal 2009-010407  
Application 09/718,767  
Technology Center 1700

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Decided: March 10, 2010

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Before CATHERINE Q. TIMM, BEVERLY A. FRANKLIN, and  
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF CASE

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision to reject claims 1, 4, 5, and 8-11. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

Claim 1 is illustrative of the subject matter of the invention:

1. A nonaqueous electrolyte battery comprising:

an outer covering member including a laminated film having an outermost layer;

a battery element contained in the outer covering member and sealed therein by heat seal, the battery element having a positive electrode and a negative electrode each having a gel electrolyte at a portion thereof, the portions of the positive and negative electrodes being laminated to each other and pressed and wound such that the battery element is a winding type gel electrolyte battery element, the battery element having a first end at which first wound edges are located and a second end, which is opposite the first end, at which second wound edges are located, the gel electrolyte comprising a plasticizer containing a lithium salt and a matrix high polymer in an amount of 2 wt% to 30 wt%, the matrix high polymer comprising a fluorine based high polymer selected from the group of polyvinylidene fluoride and vinylidene fluoride-hexafluoropropylene copolymer;

the outer covering member including a gas absorbable material and resin material interposed between the outermost layer of said outer covering member and said battery element, the gas absorbable material being one of molecular sieve and silica gel, a content of the gas absorbable material being in a range of 0.1 wt% to 95wt% on a basis of a weight of the resin material, the gas absorbable material and the resin material having a thickness in a range of 1  $\mu\text{m}$  to 500  $\mu\text{m}$ ;

a first gas absorbable member positioned at the first end of the battery element adjacent the first wound edges of the battery element and positioned between the battery element and the outer covering member, the first gas absorbable member not being a part of the outer covering member; and

a second gas absorbable member positioned at the second end of the battery element adjacent the second wound edges of

the battery element and positioned between the battery element and the outer covering member, the second gas absorbable member not being a part of the outer covering member;

said first and second gas absorbable members each being a continuous solid plate-like member and each comprising a gas absorbable material powder hardened within a resin material;<sup>1</sup>

said outer covering member having a first outer covering member and a second outer covering member, the first outer covering member and the second outer covering member being a single common piece of material;

said first outer covering member having a recessed portion accommodating the battery element;

said second outer covering member extending from one side of the first outer covering member and folded onto the first outer covering member covering the battery element and the recessed portion.

The Examiner relies upon the following evidence:

<u>First Named Inventor</u>	<u>Document No.</u>	<u>Issue or Pub. Date</u>
Wedlake	US 4,269,905	May 26, 1981
Bullock	US 5,219,676	Jun. 15, 1993
Chaloner-Gill	US 5,445,856	Aug. 29, 1995
Gozdz	US 5,607,485	Mar. 4, 1997
Nakane	EP 0 895 296 A1	Feb. 3, 1999

The Examiner maintains, and Appellants seek review of, the following rejections:

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<sup>1</sup> We agree with the Examiner (Ans. 2) that Appellants' Claims Appendix recited claim 1 without the amendments made in Appellant's response dated April 1, 2008. This recitation of claim 1 incorporates those amendments.

1. The rejection of claims 1, 5, and 8-11 under 35 U.S.C. § 103 as obvious over Nakane in view of Chaloner-Gill, Bullock and Gozdz.
2. The rejection of claim 4 under 35 U.S.C. § 103 as obvious over Nakane in view of Chaloner-Gill, Bullock, Gozdz, and Wedlake.

## II. DISPOSITIVE ISSUE

Did the Examiner reversibly err in concluding that the teachings of Nakane alone or in combination with the teachings of Chaloner-Gill would have suggested to one of ordinary skill in the art a first and second gas absorbable member positioned at the first and second ends of a battery element, with each gas absorbable member being a continuous solid plate-like member comprising a gas absorbable material powder hardened within a resin material? We answer this question in the affirmative.

## III. FINDINGS OF FACT

The Examiner's Answer states that

it is submitted that the artisan would be motivated to mix the inorganic oxide powder of EP '296 with a binder material to form solid plate-like continuous gas absorbable members. In [0031], the reference teaches that the powder may be present in the space between the battery in the case, but may also be present as an electrolyte or electrode additive. The artisan would recognize from this disclosure that it would be advantageous to include a binder such as resin for the loose powder present in the space between the case and the battery. Such a resin binder would allow the gas absorbable members to become self-supporting and would prevent migration of the powder to other parts of the battery. Accordingly, the use of resin to form gas absorbable members would be obvious to the skilled artisan.

(Ans. 4.)

The Examiner's Answer also states that

Nakane, as well as Chaloner-Gill, teach that the powder, when used in other locations in the battery, is combined with a resin (i.e., electrolyte or packaging layer). Therefore, it would be well within the skill of the art to employ a resin to contain the powder that is located between the battery element and package of Nakane. Further, the subject matter would have been obvious because a particular known technique (combining gas absorbable powder with a resin) was recognized as part of the ordinary capabilities of one skilled in the art. *KSR v. Teleflex*, 82 USPQ2d 1385, 127 S. Ct. 1727 (2007). The use of resin to form the gas absorbable material of Nakane into a "plate-like member" is within the skill of the art and would yield a predictable result. Accordingly, the rejection as stated above is believed to be proper.

(Ans. 9.)

Nakane states that the fine oxide powder may be present within a gap between electric energy generating elements (anode, cathode, and separator) and the casing (Nakane, ¶ [0031]).

Nakane also teaches that the fine oxide powder is most preferably added to the electrolyte, which may be a solid polymer electrolyte or a gel solid polymer electrolyte (Nakane, ¶ [0040]).

Chaloner-Gill teaches adding an oxygen scavenger into or between polymeric layers of a laminate protective covering (Chaloner-Gill, col. 1, ll. 49-53 and col. 2, ll. 48-53).

#### IV. PRINCIPLES OF LAW

The Examiner bears the initial burden of presenting a *prima facie* case of unpatentability. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Rejections based on § 103(a) must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. *See In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967).

The Supreme Court in *KSR* stated “[a]lthough common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). In other words, the Examiner’s basis for the rejection must identify a rationale that would have led an ordinarily skilled artisan to modify a reference in a way that would have resulted in a device corresponding to the rejected claims. *Id.*; *see also In re Rouffet*, 149 F.3d 1350, 1358 (Fed. Cir. 1998) (“hindsight” is inferred when the specific understanding or principal within the knowledge of one of ordinary skill in the art leading to the modification of the prior art in order to arrive at appellant’s claimed invention has not been explained).

#### V. ANALYSIS

The Examiner relies on the teachings of Nakane and Chaloner-Gill as evidence that the first and second gas absorbable members recited in claim 1 would have been obvious to one of ordinary skill in the art. Appellants assert that “*Nakane* does not disclose gas absorption members made of a

continuous solid member located at a first and a second end of a battery” (Br. 6-7). Appellants note that “*Nakane*’s, [sic] fine powder is made up of individual particles which do not form a continuous solid member” (Br. 6). Appellants also state that “[n]owhere does *Nakane* disclose mixing a resin material with a gas absorption material which is then molded into first and second gas absorption layers” (Br. 10). We agree with Appellants that the Examiner has failed to provide sufficient evidence and rationale to conclude that the particularly claimed gas absorption members would have been obvious from the teachings of *Nakane*.

Though Appellants assert that the reference teaches the powder limited only to an electrolyte or an electrode (Br. 6), the Examiner has made a clear finding that paragraph [0031] of *Nakane* teaches that a gas-absorbable oxide powder may be present in the space between the battery and the casing (Ans. 3 and 4). However, the Examiner admits that “*Nakane* does not teach any specific configuration of the powder surrounding the battery” (Ans. 9-10).

The Examiner has made no factual findings regarding the particular position of the powder material between the battery and the casing. The Examiner has provided no rationale as to why one of ordinary skill in the art would have particularly placed the powder at a first and second end of a battery, as required by claim 1. In fact, the Examiner makes no mention of the positional requirement from claim 1. There are several locations between the battery and the casing where powder may be positioned that would not constitute gas absorbing members positioned at a first and second end of the battery. Thus, such a general finding will not support a



conclusion that the particularly claimed positions at a first and second end of the battery would have been obvious.

Moreover, the Examiner's rationale for forming a continuous solid plate-like member from the disclosed oxide powder hardened with a resin material is too tenuous to be reasonable. While we can agree that the electrolyte of Nakane and the casing of Chaloner-Gill provide evidence that it was known in the art to combine a gas-absorbable powder and a resin, we cannot agree that forming a particular resin structure between the battery and the casing would have been obvious to one of ordinary skill in the art from this evidence. There is nothing in the teachings of Nakane or Chaloner-Gill to suggest forming a structure other than an electrolyte or a casing from a resin. It is the structure of the gas-absorbing members and not the combination of the oxide powder and a resin material which the Examiner has not shown to have been obvious.

Dependent claims 4, 5, and 8-11 depend from independent claim 1, and each require the limitations discussed above. The Examiner applied the teachings of Nakane and Chaloner-Gill in the same way for the independent and dependent claims. Accordingly, we cannot sustain any of the Examiner's rejections.

## VI. CONCLUSION

On the record before us and for the reasons discussed above, we do not sustain the rejections maintained by the Examiner.

VII. DECISION

The decision of the Examiner is reversed.

REVERSED

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